

REMARKS

The final Office Action of September 19, 2008, has been received and reviewed.

Claims 23-27, 29-64, and 70 are currently pending in the above-referenced application.

Of these, claims 36-39 and 52 have been withdrawn from consideration, while claims 23-27, 29-35, 40-51, and 53-64 have been considered and stand rejected.

No grounds of rejection have been presented against independent claim 70.

Reconsideration of the above-referenced application is respectfully requested.

Rejections under 35 U.S.C. § 112, Second Paragraph

Independent claim 45 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is respectfully submitted that one of ordinary skill in the art would readily understand the meanings of the phrases “setting a back side of a second semiconductor device against... discrete conductive elements,” “without adhesive material present on the active surface of the first semiconductor device...,” and “such that the second semiconductor device is entirely supported by the at least some discrete conductive elements.” Specifically, the back side of an upper semiconductor device is positioned on discrete conductive elements that extend over a lower semiconductor device *before* adhesive material is applied to an upper surface of the lower semiconductor device. The as-filed specification, at paragraphs [0056] to [0063], discloses an embodiment of such a method in reference to Figs. 12 through 17, providing one of ordinary skill in the art with a further understanding of the scope of subject matter to which independent claim 45 is drawn. *See, especially*, Figs. 14 and 15.

Furthermore, the Office has already acknowledged its understanding of the scope of independent claim 45. Specifically, at page 4, the final Office Action provides: “it is understood that there is no adhesive material present over the active surface of the first semiconductor device until the adhesive material is introduced...”

Accordingly, it is respectfully submitted that the language recited in independent claim 45 would be definite to one of ordinary skill in the art, and that this claim, therefore, complies with the definiteness requirement of the second paragraph of 35 U.S.C. § 112.

Withdrawal of the 35 U.S.C. § 112, second paragraph, rejections of claims 23 and 45 is respectfully requested, as is the allowance of both of these claims.

Rejections under 35 U.S.C. § 102

Claims 23, 24, 29, 30, 33, 40, 45, 46, 49, 50, 53, 59, and 61-64 have been rejected under 35 U.S.C. § 102(e) for being drawn to subject matter that is allegedly anticipated by the subject matter described in U.S. Patent 6,400,007 to Wu et al. (hereinafter “Wu”).

Although no grounds for the rejection of independent claim 70 have been presented, the patentability of independent claim 70 over Wu is explained hereinafter.

A claim is anticipated only if each and every element, as set forth in the claim, is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown *in as complete detail and in the same arrangement as that contained in the claim*. *Net MoneyIn, Inc. v. Verisign*, __ F.3d __, __ (Fed. Cir. 2008); *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Independent claim 23 recites, among other things, “securing the first semiconductor device to a substrate with adhesive material” and “introducing adhesive material between the first semiconductor device and the second semiconductor device.

Independent claim 45 is drawn to an assembly method that includes “setting a back side of a second semiconductor device against... discrete conductive elements... without adhesive material present over the active surface of the first semiconductor device.”

The method of independent claim 70 includes setting a back side of a second semiconductor device against at least some discrete conductive elements that extend over a surface of a first semiconductor device. With the second semiconductor device in place over the first semiconductor device, adhesive material is introduced between the two semiconductor devices.

Wu does not expressly or inherently describe, or anticipate, each and every element of any of independent claims 23, 45, or 70.

With respect to independent claims 23 and 70, Wu provides no express or inherent description of the introduction of adhesive material *between* two semiconductor devices. Rather, the description of Wu is limited to an assembly method in which an adhered glue layer 30 (and the subsequently formed overflow glue 50 which is an extension or overflow of adhered glue layer 30) is applied to a lower, first semiconductor chip 28 *before* a second semiconductor chip 34 is secured over the first semiconductor chip 28. *See, e.g.,* FIG. 3 of Wu.

With respect to the subject matter to which independent claim 45 is drawn, it is respectfully noted that Wu does not expressly or inherently describe an assembly method in which a second semiconductor device is positioned over a first semiconductor device, *without adhesive material present over the first semiconductor device*. Again, the description of Wu is limited to a process in which an adhered glue layer 30 and an overflow glue 50 are applied to the active surface of a first semiconductor chip 28 *before* another semiconductor chip 34 is positioned thereover. FIG. 3. Further, Wu specifically states that “upper semiconductor chip 34 is stacked above lower semiconductor chip 28 *by adhered glue 50*” (emphasis added). *Wu*, col. 3, lines 38-39. Therefore, it is apparent from Wu that the adhered glue 50 must already be present on the first semiconductor chip 28 *before* the second semiconductor chip 34 is stacked thereon. Therefore, Wu does not anticipate each and every element of independent claim 45.

It is, therefore, respectfully submitted that, under 35 U.S.C. § 102(e), independent claims 23, 45, and 70 are each drawn to subject matter that is allowable over the subject matter described by Wu.

Each of claims 24, 29, 30, 33, and 40 is allowable, among other reasons, for depending either directly or indirectly from claim 23, which is allowable.

Each of claims 46, 49, 50, 53, 59, and 61-64 is allowable, among other reasons, for depending either directly or indirectly from claim 45, which is allowable.

In view of the foregoing, it is respectfully requested that the 35 U.S.C. § 102(e) rejections of claims 23, 24, 29, 30, 33, 40, 45, 46, 49, 50, 53, 59, and 61-64 be withdrawn, and that each of these claims be allowed.

Rejections under 35 U.S.C. § 103(a)

Claims 25-27, 31, 32, 34, 35, 41-44, 47, 48, 51, 54-58, and 60 stand rejected under 35 U.S.C. § 103(a).

There are several requirements in establishing a *prima facie* case of obviousness against the claims of a patent application. All of the limitations of the claim must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Even then, a claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007). The Office must also establish that one of ordinary skill in the art would have had a reasonable expectation of success that the purported modification or combination of reference teachings would have been successful. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). There must also be “an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR* at 1396. That reason must be found in the prior art, common knowledge, or derived from the nature of the problem itself, and not based on the Applicant’s disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006). A mere conclusory statement that one of ordinary skill in the art would have been motivated to combine or modify reference teachings will not suffice. *KSR* at 1396.

Wu in View of Lee

Claims 25, 26, 31, 34, 35, 41-44, 47, 51, 54-58, and 60 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter that is assertedly unpatentable over the subject matter taught in Wu, in view of teachings from U.S. Patent 6,388,313 to Lee et al. (hereinafter “Lee”).

Claims 25, 26, 31, 34, 35, and 41-44 are each allowable, among other reasons, for depending indirectly from claim 23, which is allowable.

Wu in View of Shim

Claims 27, 32 and 48 stand rejected under 35 U.S.C. § 103(a) for being directed to subject matter that is purportedly unpatentable over the teachings of Wu, in view of teachings from U.S. Patent 6,531,784 to Shim et al. (hereinafter “Shim”).

Claims 27 and 32 are both allowable, among other reasons, for depending indirectly from claim 23, which is allowable.

Claim 48 is allowable, among other reasons, for depending indirectly from claim 45, which is allowable.

ELECTION OF SPECIES REQUIREMENT

It is respectfully submitted that independent claims 23 and 45 remain generic to all of the species of invention that were identified in the Election of Species Requirement in the above-referenced application. In view of the allowability of these claims, claims 36-39 and 52, which have been withdrawn from consideration, should also be considered and allowed. M.P.E.P. § 806.04(d).

Entry of Amendments

It is respectfully requested that the proposed amendments be given sufficient consideration that a determination may be made as to whether they place any of the claims in condition for allowance or reduce the number of issues that remain for purposes of appeal. M.P.E.P. § 714.13(III).

Entry of the proposed claim amendments is respectfully solicited. It is respectfully submitted that none of the proposed claim amendments introduces new matter into the above-referenced application, and it is not believed that their entry would necessitate another search. In particular, the proposed amendment to independent claim 23 merely indicates that it is the integrated circuitry rather than the back side of a semiconductor device that is electrically isolated from intermediate conductive elements upon which the back side rests. The proposed amendment to independent claim 45 moves language from the preamble into the body of the claim and adds the limitation that the second semiconductor device be secured to the first

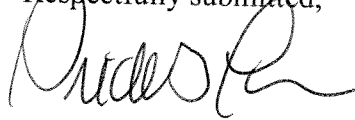
semiconductor device. It is merely proposed that unnecessary language be removed from independent claim 70.

In the event that a decision is made not to enter the proposed claim amendments, their entry upon the filing of a Notice of Appeal in the above-referenced application is respectfully requested.

CONCLUSION

It is respectfully submitted that each of claims 23-27, 29-64, and 70 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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